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Rosellinia hainanensis sp. nov. and three *Rosellinia* species new to China

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Abstract—A new species *Rosellinia hainanensis* is proposed, and three other species, *R. compacta, R. eucalypticola*, and *R. siggersii,* are described as new to China. The four species were collected from Hainan and Yunnan provinces.

Key words—*Ascomycota*, pyrenomycetous fungi, *Xylariaceae*, taxonomy

Introduction

Thirty-six species of *Rosellinia* have previously been reported from China, but 15 of them (including *R. mycophila*, *R. pulveracea*, and *R. sordaria*) have been transferred to other genera such as *Amphisphaerella* and *Coniochaeta*. Consequently, only 21 species currently accepted in *Rosellinia* have been recorded in China (Teng 1963; Tai 1979; Ju & Rogers 1990, 1999; Yuan & Zhao 1993; Lu et al. 2000; Liu et al. 2010; Petrini 2013a,b; Li & Guo 2015). Here we describe a new species collected in Hainan and report three other species new to China.

Materials & methods

The specimens were examined macroscopically with the aid of a Motic SMZ-168 dissecting microscope. Microscopic features of asci and ascospores were described from slide preparations mounted in water and Melzer's reagent, and measurements were made from 20 ascospores, using a Zeiss Axioskop 2 plus compound microscope. Photographs of stromata were taken using a Sony NEX-7. All specimens have been deposited in the Herbarium Mycologicum Academiae Sinicae, Beijing, China (HMAS).

Taxonomy

Rosellinia hainanensis Wei Li bis & L. Guo, **sp. nov.** Figs 1–3

Fungal Name FN 570257

Differs from *Rosellinia spiraliterfissurata* by its shorter and broader ascospores and from *R. chusqueae* by its higher ascus apical ring.

Type: China, Hainan, Changjiang, Bawangling, alt. 603 m, on little twigs of unidentified plant, 11.XII.2009, Y. F. Zhu & L. Guo 123 (**Holotype**, HMAS 269892).

Etymology: The epithet refers to the type locality.

Stromata solitary or crowed, pear shaped, surface coarse and black, 0.5–0.74 mm high, 0.5–0.9 mm wide. Ostioles irregular, indistinctly papillate, black. Subiculum black, reduced to stroma base, evanescent. Ectostroma 60–80 µm thick, black. Entostroma disappearing at maturity. Asci eight-spored, cylindrical, the spore bearing part 125–145 µm long, 12–15 µm broad, with apical ring 7–10 µm high, 3–5 µm broad and bluing in Melzer's iodine reagent,. Ascospores dark brown, surrounded by a slimy sheath, asymmetrically ellipsoidal, with broadly rounded ends, 21–24 × 11–13 µm, with sigmoid germ slit slightly shorter than spore-length.

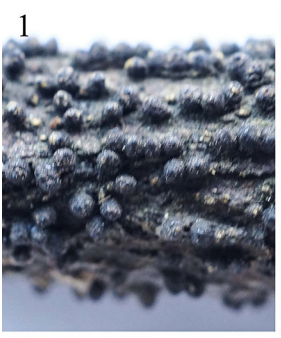
Comments: *Rosellinia hainanensis* is similar to *Rosellinia spiraliterfissurata* L.E. Petrini, which differs by having longer and narrower ascospores (26.5–34 × 7–11 µm; Petrini 2013a,b). *Rosellinia chusqueae* Pat. differs from *Rosellinia hainanensis* by its shorter apical ring (6.7–7 µm high; Petrini 2013b).

Rosellinia hainanensis is described in *Rosellinia* (rather than *Helicogermslita*) because the holotype lacks the helical ascospore germ slit that is the most distinctive character of *Helicogermslita.*

Rosellinia compacta Takemoto, Mycologia 101: 89, 2009. Figs 4–5

Stromata crowed, subglobose, copper brown, black, 0.8–1.2 mm high, 0.9–1.2 mm wide. Ostioles papillate, black. Subiculum dark brown. Ectostroma 80–140 µm thick, black. Entostroma brown. Perithecia subglobose, 550–660 µm high, 700–920 µm wide. Asci eight-spored, cylindrical, 252–275 µm total length, 8–13 µm broad, the spore bearing part 220–229 µm long, with apical ring bluing in Melzer's iodine reagent, with rounded or angular bulge at upper rim, 9–12 µm high, 3.5–7 µm broad. Ascospores light brown or brown, surrounded by a slimy sheath, asymmetrically fusiform-shaped, with thread-

Figs 1–9. ***Rosellinia hainanensis*** (HMAS 269892, holotype). 1. Stromata on twig; 2. Ascus and ascospores; 3. Ascospore. ***Rosellinia compacta*** (HMAS 253036). 4. Stromata on wood; 5. Ascus and ascospores. ***Rosellinia eucalypticola*** (HMAS 245220). 6. Stromata on wood; 7. Ascus and ascospores. ***Rosellinia siggersii*** (HMAS 253035). 8. Stromata on wood; 9. Ascospore.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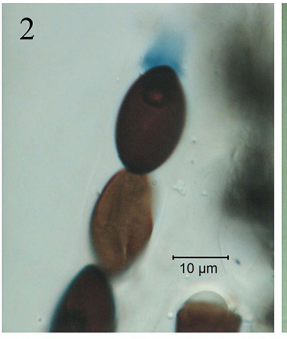
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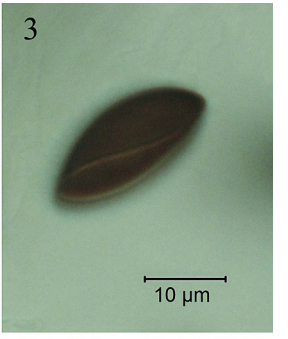
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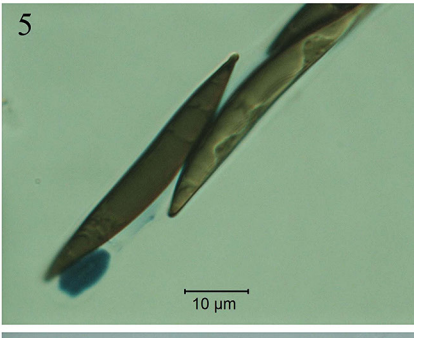
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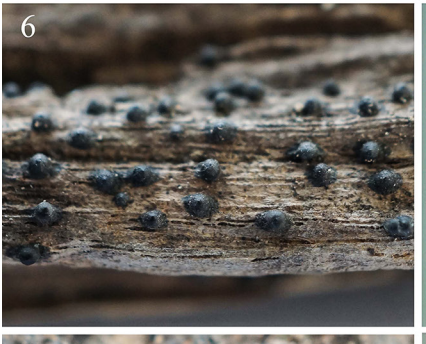
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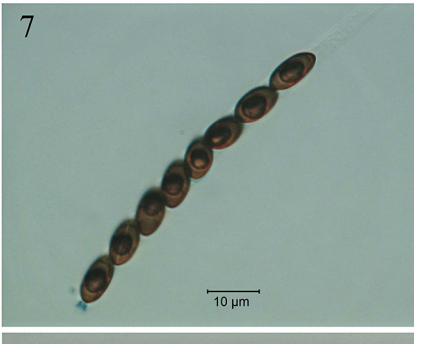
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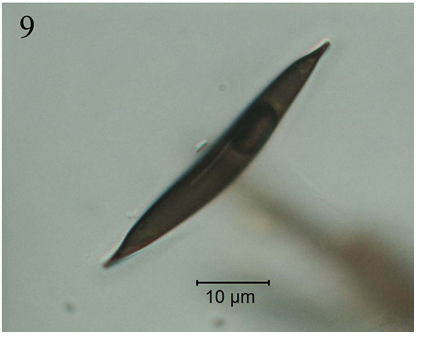
9
10 µm

like ends, 41–49(–55) × (5–) 6–9 μm, with a longitudinal straight germ slit spore-length in the center.

Specimens examined: China, Yunnan, Mengla, Menglun, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, alt. 570 m, on corticated wood, 16.X.2013, W. Li 2930 (HMAS 253039); W. Li 2949 (HMAS 253036).

Comments: *Rosellinia arcuata* Petch differs from *R. compacta* by larger stromata (0.9–2.75 mm high, 1.1–2.5 mm wide; Petrini 2013b); and *Rosellinia necatrix* Berl. ex Prill. differs from *R. compacta* by smaller ascospores (30.6–46.8 × 5.4–8.1 μm) and larger stromata (1–1.9 mm high, 1.2–2 mm wide; Petrini 2013b).

Rosellinia eucalypticola Henn. & E. Nyman, Monsunia 1: 166, 1899. Figs 6–7

Stromata solitary or 2–4 gregarious, globose or subglobose, surface smooth and black, 0.44–0.7 mm high, 0.66–1 mm wide. Ostioles papillate, black. Subiculum reduced to stroma base, evanescent. Ectostroma 40–80 μm thick, black. Entostroma brown. Perithecia subglobose, 400–500 μm high, 560–700 μm wide. Asci eight-spored, cylindrical, 100–120 μm total length, 6–7.5 μm broad, the spore bearing part 60–67 μm long, with apical ring bluing in Melzer's iodine reagent, 1.5–2 μm high, 1.5–3 μm broad. Ascospores light brown or brown, asymmetrically ellipsoidal, with broadly rounded ends, 8.5–11 × 4.5–5.5 μm, with straight germ slit as long as or slightly shorter than spore.

Specimens examined: China, Hainan, Changjiang, Bawangling, alt. 650 m, on decorticated wood, 10.I.2009, W. Li, X.Y. Liu 2216 (HMAS 245220).

Rosellinia siggersii L.E. Petrini, Index Fungorum 25: 4, 2013. Figs 8–9

Stromata crowded, subglobose, semiglobose to cupulate, sometimes with a broad, short stipe, dark brown, 1.4–1.8 mm high, 1.4–1.6(–2) mm wide. Ostioles papillate to conical, black. Subiculum woolly, dark red brown, with synnemata. Ectostroma 80–160 μm thick, black. Entostroma white or cream, disappeared at maturity. Perithecia subglobose, 900–1000 μm high, 1300–1500 μm wide. Asci eight-spored, cylindrical, 277–365 μm total length, 9–10 μm broad, the spore bearing part 200–252 μm long, with apical ring bluing in Melzer's iodine reagent, ampulliform, 12–12.5 μm high, 4–7 μm broad. Ascospores light brown or brown, asymmetrically fusiform-shaped, with thread-like ends, 41–46(–52) × 5–8 μm, with straight germ slit on flat side, 9–13 μm long, shorter than spore.

Specimens examined: China, Yunnan, Jinghong, Dadugang, alt. 1300 m, on corticated wood, 15.X.2013, W. Li 3104 (HMAS 253035).

Comments: *Rosellinia siggersii* differs from *R. acutispora* (Theiss.) L.E. Petrini by its ascospores with thread like, elongated and pinched ends (Petrini 2013a,b).

Discussion

China is a vast country with many different geographical zones, and it is probable that continuing field expeditions and study will reveal additional *Rosellinia* species.

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